

Claims 1-4 and 7 are rejected under 35 U.S.C. §102(b) as being anticipated by United States Patent No. 3,575,146 to Creighton ("the Creighton reference").

Amended Claim 1 recites:

A method for controlling an internal combustion engine, comprising:
controlling a fuel injection during an engine cycle using a control element, the fuel injection being divided into at least a first partial injection and a second partial injection, a start of triggering of the second partial injection taking place a preselected first time period after an end of triggering of the first partial injection, wherein a time between a start of triggering of the first partial injection and the end of triggering of the first partial injection varies between at least two engine cycles, and the first time period is preselected such that a start of pump delivery of the second partial injection takes place a preselected second time period after the end of triggering of the first partial injection.

The Creighton reference does not disclose at least "a time between a start of triggering of the first partial injection and the end of triggering of the first partial injection varies between at least two engine cycles, and the first time period is preselected such that a start of pump delivery of the second partial injection takes place a preselected second time period after the end of triggering of the first partial injection." Instead, the Creighton reference discloses **maintaining a fixed time** for the length of the pilot injection.

Specifically, the Creighton reference states:

When the pilot suppression switch is closed the pulse from the amplifier 88 is applied to the trigger of the electronic switch 92 and to the **pilot pulse width control circuit 94. The pilot pulse width control circuit is a fixed time delay circuit** of a well-known type, such as a one shot circuit, and applies the trigger pulse after time delay to the trigger of an electronic switch 96. When the electronic switch 92 receives a trigger pulse, the switch is made conductive and enables voltage from the pilot power

supply to charge the electroexpansive element pump to approximate the voltage generated in the pilot power supply. This causes pilot fuel injection to occur. After the electroexpansive element pump 82 is charged to the voltage of the pilot power supply 84, the electronic switch 92 is automatically turned off. **The delayed pilot trigger from pilot pulse control 94 is then applied to electronic switch 96, causing it to conduct. The switch serves the function of discharging the electrical charge from the electroexpansive pump 82, thus ending pilot injection.** (Creighton, col. 6. Ll. 43-63).

Thus, the Creighton reference describes a fixed duration pilot injection that is timed to start at a predicted starting time based on the past engine cycle. Since the Creighton reference does not disclose or suggest varying the duration of the time between the start and end of the first partial injection, it does not disclose each and every feature of Amended Claim 1. Since the Creighton reference does not disclose each and every feature of Claim 1, the Creighton reference does not anticipate Claim 1 or its dependent Claims 2-4 under 35 U.S.C. §102(b). Claim 7 is a device claim counterpart of Claim 1, containing analogous features as those of Claim 1. Thus, for at least the reasons stated above, the Creighton reference does not anticipate Claim 7 under 35 U.S.C. §102(b). It is, therefore, respectfully requested that this rejection be withdrawn.

Claims 5 and 6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Creighton reference in view of United States Patent No. 5,188,084 to Sekiguchi ("the Sekiguchi reference").

Claims 5 and 6 depend from Claim 1. As described above, Creighton does not disclose "a time between a start of triggering of the first partial injection and the end of triggering of the first partial injection varies between at least two engine cycles, and the first time period is preselected such that a start of pump delivery of the second partial injection takes place a preselected second time period after the end of triggering of the first partial

injection." The Sekiguchi reference does not overcome this deficiency. Since the Creighton and Sekiguchi references fail to teach or suggest all the features of Claim 1, from which Claims 5 and 6 depend, these reference do not render Claims 5 or 6 obvious under 35 U.S.C. § 103(a). It is, therefore, respectfully requested that this rejection be withdrawn.

CONCLUSION

In light of the foregoing, Applicants respectfully submit that all of the pending claims are in condition for allowance. Prompt reconsideration and allowance of the present application are therefore earnestly solicited.

Respectfully Submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

1. (Amended) A method for controlling an internal combustion engine, comprising:

controlling a fuel injection during an engine cycle using a control element, the fuel injection being divided into at least a first partial injection and a second partial injection, a start of triggering of the second partial injection taking place a preselected first time period after an end of triggering of the first partial injection, wherein a time between a start of triggering of the first partial injection, and the end of triggering of the first partial injection varies between at least two engine cycles, and the first time period is preselected such that a start of pump delivery of the second partial injection takes place a preselected second time period after the end of triggering of the first partial injection.

7. (Amended) A device for controlling an internal combustion engine comprising:

a control element for controlling a fuel injection during an engine cycle, the fuel injection being divided into at least a first partial injection and a second partial injection; and

means for causing a triggering of the second partial injection to start a preselected time period after a triggering of the first partial injection has ended, wherein a time between a start of triggering of the first partial injection and the end of triggering of the first partial injection varies between at least two engine cycles, and the first time period is preselected such that a start of pump delivery of the second partial injection takes place a preselected second time period after the end of triggering of the first partial injection.